

ABSTRACT

With spacers (30, 31) held between the central portion and the circumference of two plate springs (61, 61), a fixed shaft (67) erected on a fixed block (70) is inserted in a through hole (64) in the periphery of the plate spring (61) and also in the spacer (31), and nuts (68, 68) are applied for tightening from above and below (step #1). Thereby, a displacer supporting spring (6) is fixed to the fixed block (70). And the threaded portion (2b) of a rod (2a) is inserted in a through hole (63) in the center of the plate spring (61) and also in the spacer (30) from the upper surface side of the upper plate spring (61), and a nut (32) is attached to the threaded portion (2b) projecting from the lower surface of the lower plate spring (61) so as to fix the displacer (2) to the upper surface side of the upper plate spring (61) (step #2). In this state, small vibration is applied to the displacer supporting spring (6) (step #3). And the resonance frequency is detected (step #4) and on the basis of this result, the spring constant of the displacer support spring (6) (the combined spring constant of the two plate springs (61, 61)) is calculated, and then an additional weight ΔW_d reaching the target resonance frequency is calculated (step #5).